



SECTION 5

Deceased Donor Kidney Donation

SUMMARY

This section summarises kidney donation activity from deceased donors in 2021, compared with previous years. The rate of kidneys transplanted in 2021 was 25.5 pmp in Australia and 19.7 pmp in New Zealand.

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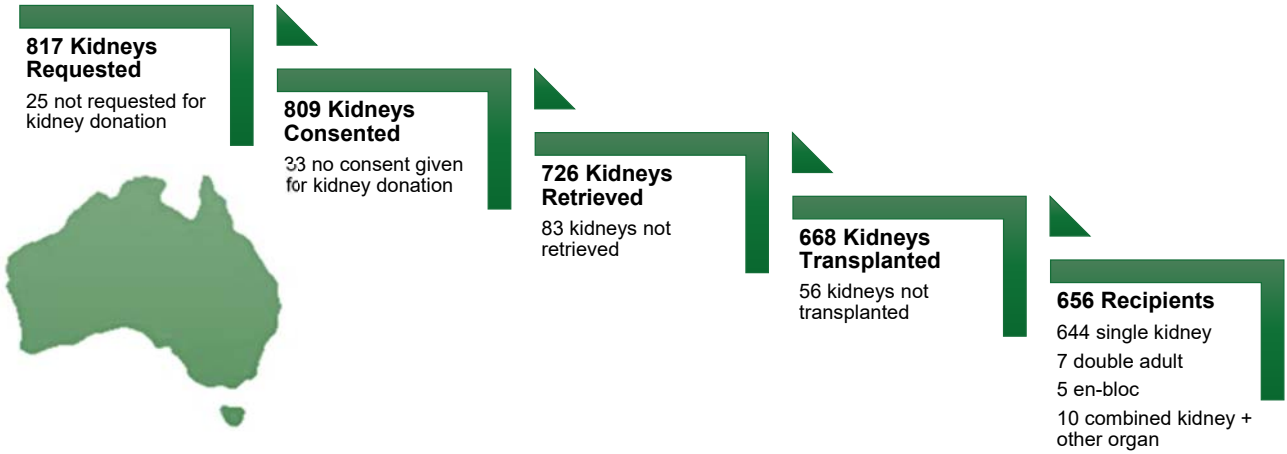
Kidney Donation

Of the 421 actual deceased organ donors in 2021 in Australia, 405 (96.2%) consented to kidney donation. From these kidney donors, 726 kidneys were retrieved and transplanted into 656 recipients. Of these 656 kidney transplant recipients, there were thirty-one kidney/pancreas recipients, seven double adult kidney recipients, five en bloc kidney recipients, seven combined kidney/liver recipients, two combined kidney heart transplant recipients and one combined kidney/pancreas/liver recipient.

There were 486 kidneys from the brain death donation pathway and 182 kidneys following donation after circulatory death in 2021, compared with 505 and 210 respectively in 2020.

There was an overall decrease of 6.8% in the total number of kidney transplant recipients (656) in 2021 compared to the previous year (704); and an increase to 25.5 per million population (pmp) from 27.4 (pmp). Figure 5.1.1 shows the outcomes of requests for kidney donation in Australia.

Figure 5.1.1 Outcomes of Request for Kidney Donation from Actual Donors for Australia 2021

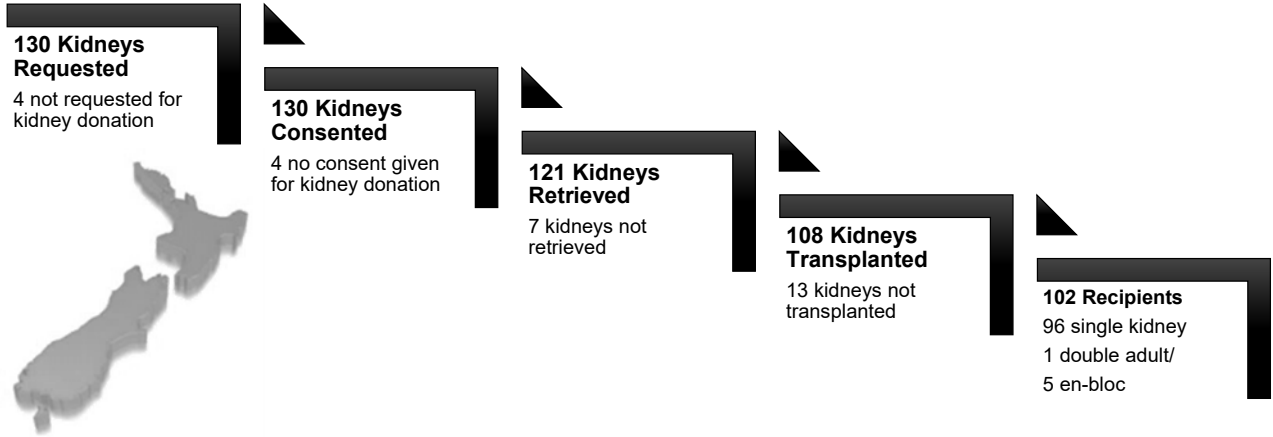


In New Zealand, there were sixty-four actual donors (97.0%) who consented to kidney donation. From these kidney donors, 121 kidneys were retrieved, of which 108 were transplanted into 102 recipients. There were 102 kidneys transplanted from donation from the brain death donation pathway and six kidneys transplanted following donation after circulatory death.

Of the 102 recipients, five received a combined kidney/pancreas and three a combined kidney/liver. There was one double adult kidney transplant and five en bloc kidney transplants in 2021.

There was an overall decrease of 2% in the total number of kidney transplant recipients (102) in 2021 compared to the previous year (100); the rate of transplantation rose to 19.7 per million population in 2021 from 19.6 pmp in 2020. Figure 5.1.2 shows the outcomes of requests for kidney donation in New Zealand.

Figure 5.1.2 Outcomes of Request for Kidney Donation from Actual Donors for Australia 2021



Figures 5.2 and 5.3 show the number of kidneys transplanted by donation pathway and the number of kidney recipients by transplant region.

Figure 5.2.1 - Kidneys Transplanted by Donation Pathway Australia 1998–2021

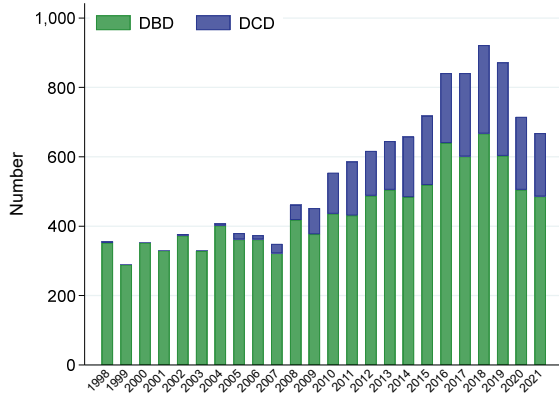


Figure 5.2.2 - Kidneys Transplanted by Donation Pathway New Zealand 1998–2021

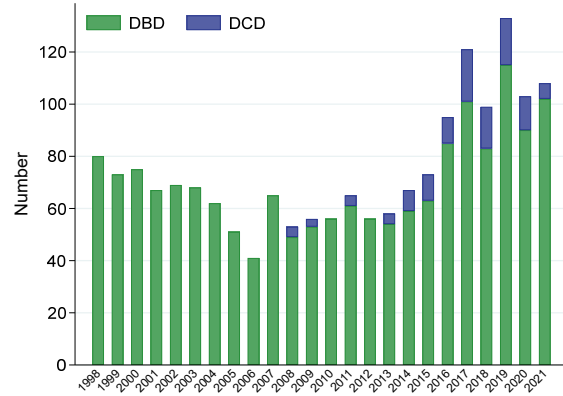
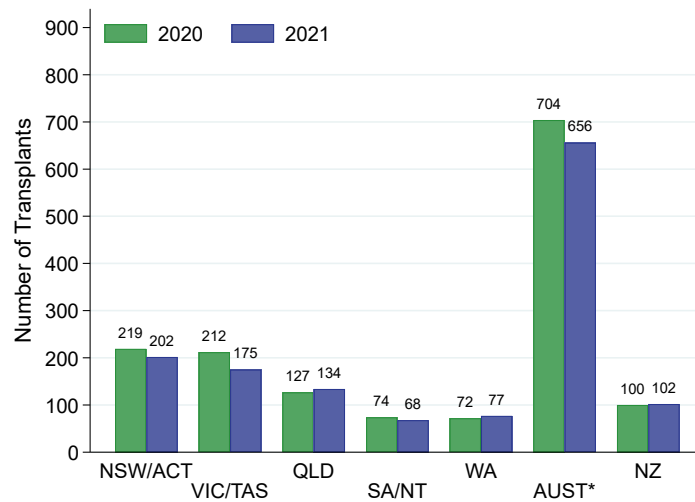


Figure 5.3 - Deceased Donor Kidney Transplant Recipients* by Transplant Region, Australia and New Zealand, 2020–2021



Age of Kidney Donors

The age distribution of donors providing retrieved kidneys for Australia and New Zealand is presented in Figure 5.4.

Figure 5.4.1 - Age of Donors Providing Retrieved Kidneys Australia 2021

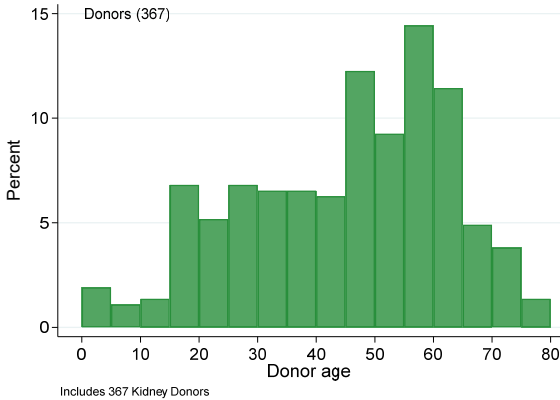
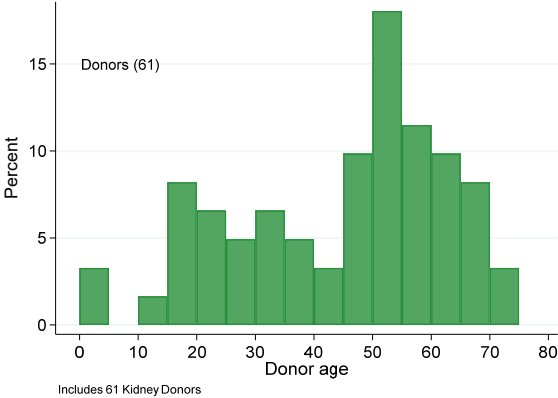


Figure 5.4.2 - Age of Donors Providing Retrieved Kidneys New Zealand 2021



Donor Kidney Function

In 2021 in Australia, 69 donors (16%) had a terminal serum creatinine concentration of $\geq 125 \mu\text{mol/L}$ (Table 5.1). In 2021 in New Zealand, 9 donors (15%) had a terminal serum creatinine concentration of $\geq 125 \mu\text{mol/L}$.

Table 5.1 Terminal Serum Creatinine Concentration 2017–2021

Terminal Serum Creatinine ($\mu\text{mol/L}$)	Australia					New Zealand				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
0–99	73%	75%	70%	78%	77%	91%	75%	75%	72%	80%
100–124	9%	7%	7%	5%	6%	2%	10%	10%	17%	5%
125–149	4%	5%	5%	4%	3%	2%	8%	4%	5%	7%
150–174	3%	2%	4%	2%	2%	2%	4%	3%	2%	2%
175–199	2%	2%	2%	2%	2%	-	-	1%	2%	-
200–224	1%	1%	2%	1%	2%	2%	2%	-	-	-
225–249	2%	1%	1%	2%	1%	2%	-	1%	2%	2%
≥ 250	7%	8%	9%	7%	6%	2%	2%	4%	2%	5%

In Australia, 58 donors (14%) had a terminal serum urea concentration of $\geq 9 \text{ mmol/L}$ and creatinine concentration of $\geq 125 \mu\text{mol/L}$. In New Zealand, 5 donors (8%) had a terminal serum urea concentration of $\geq 9 \text{ mmol/L}$ and creatinine concentration of $\geq 125 \mu\text{mol/L}$.

Kidneys Not Retrieved

The reasons why kidneys were not retrieved for organ transplantation are presented in Table 5.2.

Table 5.2 Reasons for Kidney Not Retrieved in 2021

Reason	Australia	New Zealand
Logistics	0	0
Not Medically Suitable	45	7
Surgically Unsuitable	0	0
Trauma to Organ	0	0
No Suitable Recipients	36	0
Age of Donor	0	0
DCD Donor	2	0
Consent Withdrawn	0	0
Others	0	0
Total	83	7

Kidneys Retrieved and Not Utilised for Transplantation

Figure 5.5 shows the non-utilisation rate of retrieved kidneys – the proportion of kidneys that were retrieved for the purpose of solid organ transplantation, but not ultimately transplanted into a recipient (either due to an absence of suitable recipients, or the kidney being found to be medically or surgically unsuitable after retrieval).

Figure 5.5.1 - Non-utilisation Rate of Retrieved Kidneys - Australia 2017–2021

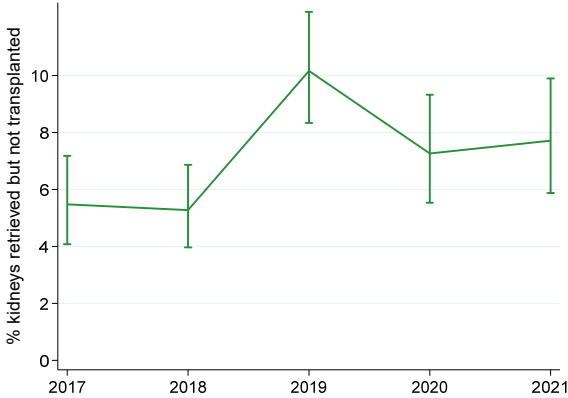
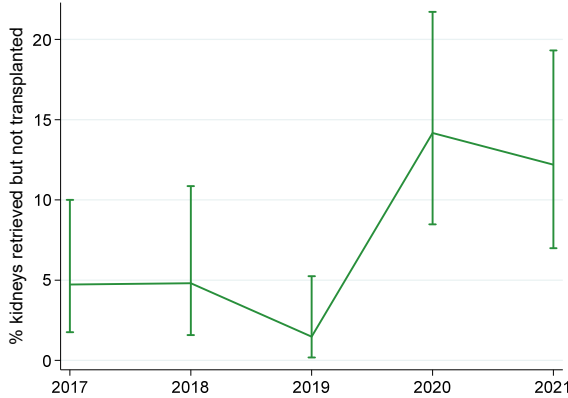


Figure 5.5.2 - Non-utilisation Rate of Retrieved Kidneys - New Zealand 2017–2021



The reasons why kidneys were not utilised for organ transplantation is presented in Table 5.3.

Table 5.3 Reasons Kidneys Retrieved & Not Utilised for Transplantation, Australia (New Zealand) 2017–2021

Reason	2017	2018	2019	2020	2021
Logistics	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Not Medically Suitable	34 (6)	34 (5)	71 (2)	40 (17)	43 (10)
Not Surgically Suitable	0 (0)	4 (0)	4 (0)	3 (0)	4 (1)
Trauma to Organ	3 (0)	3 (0)	8 (0)	4 (0)	6 (0)
No Suitable Recipients	10 (0)	9 (0)	15 (0)	5 (0)	2 (1)
Recipient Issue	2 (0)	2 (0)	1 (0)	4 (0)	1 (0)
Other	0 (0)	0 (0)	0 (0)	0 (0)	0 (1)
Total	49 (6)	52 (5)	99 (2)	56 (17)	56 (13)

Outcome of Kidney Donation

Kidneys are counted as separate organs. The information relating to the request for kidney donation refers only to those patients who became a kidney donor. If consent for donation for transplantation was sought and not obtained the Registry has no record of these potential donors. The difference between a request and a consent is a known objection by the donor or family refusal for a specific organ to be donated for transplantation. Organ donation for the purpose of research is excluded when calculating a specific organ's non-utilisation rate for transplantation.

The outcome of kidney donation activity in Australia and New Zealand throughout the donation pathway is shown in table 5.4.

Table 5.4.1 Outcome of Request for Kidney Donation in Australia, 2017–2021

Outcome of Request	2017	2018	2019	2020	2021
Total Donors	510	554	548	463	421
Kidneys Requested for Donation	989	1090	1076	888	817
Kidneys Not Requested for Donation	31	18	20	38	25
Kidneys with Consent Given	987	1086	1072	878	809
Kidneys with Consent Not Given	2	4	4	10	8
Kidneys Retrieved	894	985	974	771	726
Kidneys Not Retrieved	93	101	98	107	83
Kidneys Transplanted	841	922	872	715	668
Left Kidney Transplanted	411	446	423	349	322
Right Kidney Transplanted	412	426	419	344	322
Double/En Bloc Kidney Transplanted	18	50	30	22	24
Total Kidneys Not Used for Transplantation	53	63	102	56	58
Left Kidney Not Used	24	20	43	27	25
Right Kidney Not Used	23	32	48	25	29
Double/En Bloc Kidney Not Used	2	0	8	4	2
Kidneys Retrieved for Research and Not for Transplantation	4	11	3	0	2
Recipients Transplanted	832	897	857	704	656
Double Adult Kidney Procedures	4	20	9	6	7
En Bloc Kidney Procedures	5	5	6	5	5
Kidney Non-Utilisation Rate	5.5%	5.3%	10.2%	7.3%	7.7%
Kidney Utilisation Rate	94.1%	93.6%	89.5%	92.7%	92.0%

Table 5.4.2 Outcome of Request for Kidney Donation in New Zealand, 2017–2021

Outcome of Request	2017	2018	2019	2020	2021
Total Donors	73	62	74	64	66
Kidneys Requested for Donation	143	122	142	126	130
Kidneys Not Requested for Donation	3	2	6	2	4
Kidneys with Consent Given	143	122	142	126	130
Kidneys with Consent Not Given	0	0	0	0	0
Kidneys Retrieved	127	104	135	120	123
Kidneys Not Retrieved	16	18	7	6	7
Kidneys Transplanted	121	99	133	103	108
Left Kidney Transplanted	58	48	64	48	50
Right Kidney Transplanted	57	49	63	49	46
Double/En Bloc Kidney Transplanted	6	2	6	6	12
Total Kidneys Not Used for Transplantation	6	5	2	17	15
Left Kidney Not Used	2	3	0	8	6
Right Kidney Not Used	4	2	0	7	9
Double/En Bloc Kidney Not Used	0	0	2	2	0
Kidneys Retrieved for Research and Not for Transplantation	0	0	0	0	0
Recipients Transplanted	118	98	130	100	102
Double Adult Kidney Procedures	3	1	3	3	1
En Bloc Kidney Procedures	0	0	0	0	5
Kidney Non-Utilisation Rate	4.7%	4.8%	1.5%	14.2%	12.2%
Kidney Utilisation Rate	95.3%	95.2%	98.5%	85.8%	87.8%